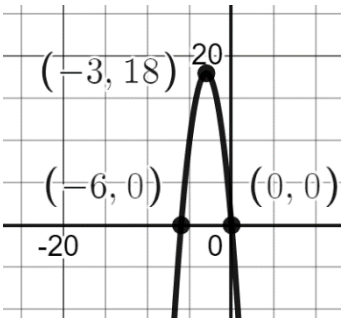
F22 MAT 1070 Final Exam Key

1. $(-\infty, 0) \cup (0, \frac{1}{4}) \cup (\frac{1}{4}, \infty)$
2. $[-3,4]$
3. $y = -\sqrt{x} + 2$
4. $y = -\frac{1}{2}x - 2$
5. a. $f(-2) = -8$
   b. $f(4) = 3$
6. The two numbers are 14 and 28.
7. a. -6
   b. $\frac{2}{3}$
   c. $-\frac{1}{9}x^2 - \frac{4}{3}x + 3$
8. $6x + 3h - 1$
9. a. Domain: $(-\infty, 0) \cup (0, \infty)$
   b. Range: $(-\infty, 3]$
   c. Decrease: $(-2,0), (2, \infty)$
   d. $f(1) = 2$
10. x = 3
11. x = 9
12. The width was 7 cm, the length was 9 cm.
13. a. -3
    b. 5
    c. $\frac{1}{4}$
14. x = 7
15. $x = 1 \pm 2i$
16. $x \in \{-2, -1, 4, 5\}$
17. a. $V(x) = x^3 - 10x^2 + 25x$
    b. The height and width are each 5 in, the length is 10 in.
18. a. (-3, 18)
    b.



19. $(-\infty, 1) \cup (1,2)$
20. a. hyperbola
    b.